

8 February 1980

NOTE FOR: Director of Central Intelligence

FROM : PB/NSC Coordination Staff

SUBJECT : Modernizing the PDB

1. Following up on our chat about new forms for transmitting the PDB, I did some research on how businesses approach the issue of modernizing their "intelligence" reporting to top consumers. The attached excerpt is fairly typical of what I found: reporting is "on-line," updated on a daily basis, and consumers can indicate when they would like more information. I thought you might want to pass this on to the PDB staff (or use it for ammunition during your luncheon discussion with them).

2. To recap my conception of how this system would work:

--The President (or other top consumer) would activate the system with his special code. He would automatically be shown a "menu" ("Kiplinger-style"), of what the PDB contained. (A sample of this type of menu is also attached based on today's PDB.)

--Next, he would have the option of indicating (through a simple code) the items on which he would like more detail. (It should also be possible for the consumer to indicate areas where further detail and/or clarification is desired or items that he would like followed for the next several days.)

--The program would end with the automatic display of a special analysis (comparable to the present "Annexes").

3. I am sure there are disadvantages to trying to develop a new system (e.g. how can we be sure consumers will read what they should? Present consumers are comfortable with the PDB as it is and would be uncomfortable with a computer TV screen). But I do see a number of significant advantages:

--Greater security

--Ability to update analyses as new information is received

--The use of a Kiplinger-type menu would assure that the consumer is at least made aware of new current intelligence facts

--The consumer can ask us questions directly.



Attachments

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COMPUTER SUPPORT FOR MANAGERS

Today's business data processing systems do not serve managers' information needs well. Most application systems have been developed to perform operational jobs—keep records, prepare invoices, write pay checks, and so on. Yes, some things have been done to help managers—summary reports, for instance, and some analyses of data. But only a small fraction of the information that a manager needs comes from the computer. The higher on the management scale that the manager is, the more this is apparent. But we think that the computer environment of the 1980s will try to change this situation significantly. New hardware and software products will be offered that *directly* help managers to do their jobs. In this report, we get into this subject by discussing what activities managers perform that are amenable to computer support.

Continental Illinois National Bank, with headquarters in Chicago, is a large international bank; it is the seventh largest in the U.S., according to *Fortune* magazine, but is fourth among the U.S. banks in its international operations. The bank has over \$27 billion in assets and employs more than 10,000 people. It has commercial representative offices in nine U.S. cities and subsidiaries and branches in many other countries of the world.

Like many major companies, by the mid-1970s the bank had been looking at ways that computer technology could aid office functions. A technical planning and review effort had been organized, to systematically look at where the technology was going and the opportunities that new technology offered. Several somewhat independent projects were initiated

for improved office functions, including the installation of some word processing systems.

Then, in the fall of 1977, a significant change took place, as an outgrowth of the technical planning and review. Bank management saw that the plunging costs for information processing and storage would soon begin to impact the office in a major way. More benefits would be realized by an integrated effort on office systems; independent projects would not be sufficient.

Also, management began to see a new way to solve a familiar problem. This problem was their huge end-of-quarter printing workload, involving some ten million lines of print per day. A significant portion of this printing was made up of listings of all records in specific

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files (such as journal files and some customer account files) that office workers would use for quick lookups.

In the past, this growing printing problem had been solved by obtaining more and faster printers. But on the horizon was new technology that would allow the bank to store much of the report data on-line, with indexes for fast retrieval. Employees could then use terminals to retrieve specific information upon demand, eliminating the need for the quick lookup reports. The goal was to cut down the printing, not give in to it.

So, in late 1977, an overall 'office automation' project was created and a team formed; it was officially in business on January 1, 1978. Management decided that this overall project should chart a path by which the bank could move ahead with new office systems and, at the same time, take advantage of the projects that were already underway.

What the bank has accomplished in the past eighteen months consists of a number of elements, some of which were already underway when the overall project was formed. Following is a list of the key elements.

Quick reports. A few years back, if managers wanted special reports prepared from computer files, they had to submit their requests for the required programming. It then usually took several weeks before a report was delivered, and the cost was about \$2,000. Consequently, very few such reports were requested. Then a file management system was obtained; with it, the delay was cut to about two weeks and the cost reduced to a few hundred dollars. The number of requests went up, and so did the load on the central printers. In late 1977, the systems department developed CARL, a 'quick hatch' reporting system. With CARL, user department people enter report specifications on a terminal. The resulting report is printed out (or displayed graphically) at the terminal, often within 30 minutes and at a cost of under \$20. Bank management now requests about 60 such reports per day, but without a consequent load on the central printers.

On-line queries. The next step taken to improve performance and reduce the load on the central printers was to install an on-line query

system, which the bank calls IRIS. IRIS currently uses IBM's STAIRS inverted file system which allows users to retrieve records on the basis of specified values of data fields.

Special IRIS files have been set up, which are managed by STAIRS. These files are loaded with data selected from the regular data processing files, on a daily basis. In addition to such internal data, some external data is also purchased, such as financial data on company sales and earnings. So far, this external data is quite limited; it is expected that more will be provided in the future.

Since many of the user departments already had terminals, for other applications, IRIS was ready to go by the spring of 1978. By the end of last year, several hundred managers and professionals (for instance, sales people for selling bank services) were regularly using the system.

The use of IRIS is expected to spread, as the number of terminals increases. Eventually, all managers, professionals, and secretaries may have terminals at their desks. Sometimes a shocked silence greets this proposal, they told us, until it is pointed out that a low-function dial-up terminal now costs the bank less than an electric typewriter. As a point of interest, about one-half of the managers and professionals who now use IRIS use the terminals themselves; the other half work through intermediaries.

Both CARL and IRIS have eliminated a large fraction of the programming time previously required to write retrieval and reporting programs. Programmers generally did not like this work anyway, as it interrupted their regular work. However, custom programming is still required at times, when special formatting of output is desired.

Graphics. Originally, CARL and IRIS retrieved data and presented it in numerical form. To aid the comprehension of the data, the office automation project has developed a color graphics system, that uses a color CRT for soft copy and a multi-color pen plotter for hard copy. Also, some data analysis routines have been provided.

In the use of this system, the user asks CARL for the desired data. When satisfied that the appropriate data has been retrieved, the user

calls on one or more of the analysis routines, such as fitting trend lines to the data. The graphical data is then displayed on the CRT. If hard copy is desired, output on the plotter is requested. Also, each graph is customized, with the axes scaled according to the data.

This is the information system that is most impressive to senior management at the bank, we were told.

Computer message system. The bank has had a communication network in place for some time, that ties headquarters to all bank locations. A computer message system has been added, as a network service. A 'friendly' user interface has been developed, to encourage direct use by managers and professionals.

With this system, each user is assigned a 'mail box' number, and messages for that user are directed to that number. There is no output until the user asks to see the messages in the mail box. Routines are available that make it easy to send replies or to forward the message to other users.

This system is quite new and, as yet, most managers and professionals do not have their own terminals. But the system is beginning to replace inter-office mail.

Word processing. The bank has standardized on one brand of word processing equipment, for compatibility. And this has made the task of interfacing the word processing systems with the communication network much easier. The word processing equipment is used in its conventional sense—to prepare letters, memos, reports, etc. by ultimately typing them on paper. But there are some not-so-conventional uses, too, as the following example will show.

Consider the case, we were told, where the Brussels branch of the bank wants to prepare a cash management proposal to submit to a Belgian subsidiary of a U.S. company. The branch people in Brussels would prepare the initial draft of the proposal, using the word processing equipment. They might then send it to New York, via the network, where it would be received, stored, and printed out on the word processing system there. The New York people would study the proposal, perhaps make some changes, and send it on (via the network) to Chicago headquarters. Some further changes

might be made there, and then the proposal would be sent back to Brussels, for printing out and delivery to the customer. If it were necessary, this whole process could be done in one day.

'Home word clerks'. Many companies are experiencing a shortage of competent secretarial help. Continental Bank has put its word processing and computer message system to work for alleviating this problem. The bank has begun employing young mothers, retired persons, and handicapped persons for a position called 'home word-processing clerk.' These people do typing on word processing equipment that the bank has installed in their homes.

In use, a principal dictates a letter or memo over the phone to the central dictation recording system. At that point, the message can be assigned either to the in-house word processing center or to a home word clerk, for transcribing. In the latter case, the message is transmitted to the home over the phone line and recorded there on dictation equipment. The word clerk transcribes the message, using the word processing equipment, and then transmits it to the principal via the computer message system. This approach allows the bank to hire skilled people who otherwise might not be able to do such work.

Answer phones. The office automation team recognized that answering a telephone is a very interruptive activity for a manager or professional. This activity not only takes up time but also it interrupts the person's thought processes.

Somewhat surprisingly, the telephone turns out not to be as efficient a communications process in the business environment as one might think. Why? Studies have indicated that, on the average, managers are at their desks and willing to receive phone calls only about 25% of their working time. The other 75% of the time, they are either away from their desks or are engaged in activities where interruptions are not desired.

So what happens when a call comes in during that 75% of the time. There are four cases. Case 1: The person has a personal secretary, who answers the phone and takes the message

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